

Application No. 10/729,351
Amendment dated March 7, 2005
Reply to Office Action dated October 6, 2004

Remarks

Claims 1-20 are pending.

Claims 1-20 stand rejected.

Claim 1 has been amended.

Claims 1-20 are submitted herein for review.

No new matter has been added.

In paragraphs 2-4 of the Office Action, the Examiner has objected to the abstract for containing overly formal language. Applicants have amended the abstract accordingly and respectfully requests that this objection be withdrawn.

In paragraph 6 of the Office Action, the Examiner has rejected claims 1-4, 6-7, 9, 11-16 and 18 under 35 U.S.C. § 102(b) as being anticipated by Wooters (U.S. Patent No. 6,239,363). In paragraph 9 of the Office Action, the Examiner has rejected claims 10 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Wooters. In paragraph 10 of the Office Action, the Examiner has rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Wooters in view of Quinn et al. (U.S. Patent No. 6,748,147). In paragraph 11 of the Office Action, the Examiner has rejected claims 5, 17 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Wooters in view of Glew et al. (U.S. Patent No. 6,639,152).

Applicants respectfully disagree with the Examiner's contentions and submit the following remarks in response.

The present invention, as claimed in claim 1 is directed to a flexible electrical elongated device, having a longitudinal axis (X) and suitable for service in a high mechanical load

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environment. The device has at least one elongated electrical conductor element and an elongated load bearing component along the longitudinal axis. The elongated load bearing component has an external surface including at least one groove disposed along the longitudinal axis.

The groove is configured to hold the conductor element within it and against the inside surface of the groove continuously along substantially the entire length of the device, while allowing the conductor element to move substantially radially when the device is bent.

In this arrangement with the conductor element held against the inside surface of the groove along the length of the cable, the device provides significant added strength to the conductor element to support it during service in a high mechanical load environment. For example, page 5, paragraph [0034] of the present invention states:

“According to an additional characteristic of the invention, the groove can be tight enough to hold said conductor element substantially continuously along said longitudinal axis, *thereby ensuring optimized continuous transfer of mass and inertia forces in all the length.*” (emphasis added)

Such a configuration is shown in Fig. 2, when the device is in a straight line, and in Fig. 3 showing the conductor elements moving radially towards and away from the longitudinal axis (X) when the device is bent, while still being held against the inside surface of the groove continuously along substantially the entire length of the device. Thus, throughout the movement of the cable the conductor element can transfer its mass and inertia forces to the load bearing component.

On the contrary, the cited prior art, namely Wooters, teaches a variable buoyancy cable

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for use in submerged settings. The cable maintains a core 50, having channels 52a-52h, with any number of different utility cables 60, 62, 64, 66, 68 and 70 running through the channels. The functions of the cable in Wooters is to provide a cable with a strong inner core that supports the utility cables as they are being sent over the sheave into the water, and also to provide a variable buoyancy by allowing the inside of channels 52a-52g to fill with water.

In order to achieve the desired results, Wooters specifically calls for the utility cables in the channels *not to continuously contact the inside walls of the channels*. For example, column 6, lines 9-19 state:

“In this regard, and as shown in FIG. 5, which is a sectional view of FIG. 4 taken at section 5--5, the utility lines 60, 62, 64, 66, 68 and 70 are positioned in their respective channels *in a slackened condition*. This is illustrated for the utility line 66 positioned in the channel 52e, but is also exemplary of the other utility lines 60, 62, 64, 68 and 70. In a slackened condition, the utility line 66 has a plurality of bends 74. *The slackened condition of the utility lines 60, 62, 64, 66, 68 and 70 enables the cable 22, and specifically the core 50 and the sleeve 44 to undergo significant strain without failing the utility lines 60, 62, 64, 66, 68 and 70.*” (emphasis added)

Thus, the cable in Wooters acts to protect the utility cables by providing free room to move within the channel so that when the cable is under high stress, the stress on the cable is instead borne by the core. Such an arrangement is configured therefore to protect utility cables from experiencing externally caused mechanical stresses rather than supporting them to assist in resisting inherent stresses caused by the mass or inertia of the utility cable itself during movement or installation.

Applicants respectfully submit that the cited prior art reference, namely Wooters, does

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not teach or suggest all of the elements of claim 1. For example, there is no teaching or suggestion in Wooters that discloses a groove configured to hold the conductor element within it and against the inside surface of the groove continuously along substantially the entire length of the device. In fact, the Wooters reference specifically teaches away from continuous contact with the inner surface of the grooves, where such an arrangement would retard the proper operation of their cable arrangement.

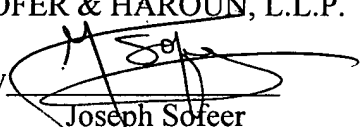
As such, Applicants submit that cited prior art does not teach or suggest the present invention as claimed and respectfully request the rejection of independent claim 1 under 35 U.S.C. § 102 as anticipated in view of the Wooters reference. Also, as claims 2-20 dependent from independent claim 1, Applicants request the rejection of these claims be withdrawn as well.

In view of the forgoing, Applicants respectfully submit that pending claims 1-20 are in condition for allowance, the earliest possible notice of which is earnestly solicited. If the Examiner feels that an interview would facilitate the prosecution of this Application he is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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